

Supplementary table 1: Immunohistochemical and molecular findings in classical and simplex/differentiated VINs, invasive squamous cell carcinomas and in two cases of extramammary M. Paget. According to the WHO classification, usual type VIN cases 1-4 represented VIN 2 lesions, cases 5-27 VIN 3 lesions.

Case No.	Age	Histology	HPV	p16 IHC	p53 IHC	p53 mutation	3q26/cen7
1	63	usual type VIN	16	+++	0	-	NA
2	72	usual type VIN	16	+++	5	-	0.94
3	48	usual type VIN	16	+++	0	-	0.95
4	37	usual type VIN	16	+++	0	-	0.89
5	35	usual type VIN	16	+++	0	-	0.77
6	46	usual type VIN	16	+++	0	-	1.48
7	75	usual type VIN	-	-	30	-	1.02
8	70	usual type VIN	16	+++	0	-	1.53
9	45	usual type VIN	16	+++	0	-	0.94
10	51	usual type VIN	16	++	0	-	1.38
11	60	usual type VIN	-	+++	0	-	1.22
12	53	usual type VIN	16	+++	0	-	1.62
13	75	usual type VIN	18	+++	0	-	1.34
14	52	usual type VIN	16	+++	0	-	1.67
15	47	usual type VIN	16	+++	0	-	1.00
16	61	usual type VIN	-	-	0	-	1.65
17	69	usual type VIN	16	+++	0	-	1.69
18	67	usual type VIN	16	+++	0	-	2.05
19	38	usual type VIN	16+6/11	+++	0	-	1.04
20	45	usual type VIN	-	+++	0	-	0.99
21	17	usual type VIN	16	+++	0	-	0.99
22	46	usual type VIN	16	+++	0	-	1.32
23	72	usual type VIN	-	-	90	Ex.8 T1072->G (V274G)	NA
24	40	usual type VIN	16	+++	0	-	NA
25	36	usual type VIN	-	+++	20	-	1.11
26	29	usual type VIN	16	+++	0	-	1.08
27	83	usual type VIN	-	-	80	Ex.7 G985->A (G245D)	2.34
28	73	differentiated VIN	-	-	90	-	1.33
29	75	differentiated VIN	-	-	30	-	1.93
30	77	differentiated VIN	-	-	90	-	2.78
31	54	differentiated VIN	-	-	0	-	1.79
32	61	differentiated VIN	-	-	0	-	1.4

Case No.	Age	Histology	HPV	p16 IHC	p53 IHC	p53 mutation	3q26/en7
33	70	keratinizing SCC G1	-	++	0	-	1.29
34	45	non-keratinizing SCC G3	-	+++	90	-	1.15
35	77	keratinizing SCC G1	-	-	90	-	1.66
36	47	keratinizing SCC G2	-	++	100	Ex.7 G981->T (G244C)	1.39
37	45	non-keratinizing SCC G3	-	+++	5	-	1.01
38	86	non-keratinizing SCC G3	6/11	+++	40	-	1.03
39	84	keratinizing SCC G2	-	-	80	-	1.23
40	34	non-keratinizing SCC G3	-	-	90	-	1.88
41	78	keratinizing SCC G2	-	++	0	-	0.87
42	80	keratinizing SCC G2	-	+++	15	-	1.30
43	42	non-keratinizing SCC G2	-	-	0	-	1.39
44	74	keratinizing SCC G1	-	++	0	-	1.81
45	75	basaloid SCC G3	33	+++	0	-	1.76
46	73	keratinizing SCC G2	-	-	90	-	1.21
47	45	keratinizing SCC G2	-	++	0	Ex.5 C657->T (Q136Stop)	2.87
48	35	keratinizing SCC G1	-	++	0	Ex.4 G409->A (W53Stop)	1.53
49	64	keratinizing SCC G2	-	+++	90	-	1.70
50	64	keratinizing SCC G2	-	++	80	-	1.84
51	37	basaloid SCC G3	16	+++	0	-	1.11
52	55	keratinizing SCC G2	-	+	0	-	1.36
53	43	keratinizing SCC G2	-	++	0	-	1.39
54	54	non-keratinizing SCC G3	-	++	100	Ex.5 G758->A (C176Y)	2.04
55	40	warty SCC G2	16	+++	0	-	1.93
56	75	keratinizing SCC G1	-	-	60	-	1.66
57	31	keratinizing SCC G2	-	+++	80	-	1.76
58	45	keratinizing SCC G2	-	++	0	-	NA
59	61	keratinizing SCC G1	-	+	60	-	2.28
60	38	keratinizing SCC G2	16	+++	0	-	2.00
61	83	M. Paget	-	-	10	-	0.61
62	77	M. Paget	-	-	0	-	1.00